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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/616,314	07/17/2000	Mikio Kuwahara	NIT-209	7237

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ALEXANDRIA, VA 22314

EXAMINER

LEI, TSULEUN R

ART UNIT	PAPER NUMBER
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2686

DATE MAILED: 07/30/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/616,314

Applicant(s)

KUWAHARA ET AL.

Examiner

TSULEUN R. LEI

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5,9-12,15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5,9-12,15 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 2-5, 9-12 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Van Heeswyk et al. (U.S. Patent 6,298,050).

Regarding Claim 2, van Heeswyk teaches a wireless positioning method for estimating a position of a terminal by using reception timing of signals transmitted from at least first and second base stations in a cellular communication system (Col.1, Lines 49-50, wherein triangulation involves at least first and second base stations), comprising: a first step of measuring a reception timing of a received signal from the first base station having a power higher than that of a received signal from a second base station (Col.2, Lines 1-4, wherein in a CDMA system signal from one base station is always stronger than signals from other base stations.); a second step of canceling the received signal from the first base station (Col.2, Lines

Art Unit: 2686

44-49, wherein the interfering user's signal is to be canceled just as the signal from the first base station is to be canceled in this claim.) ; and a third step of measuring a reception timing of the received signal from the second base station after the second step, wherein the second step comprises: a fourth step of storing the received signals from the first and second base stations into a storing circuit in the terminal (Col.2, Lines 38-49; Fig.7; It is inherent that a storing circuit is in the terminal since detect, decode and reconstruct all need data storing circuit); a fifth step of forming a replica of the received signal of the first base station from the stored signals (Fig.7, User signal reconstruction 202); and a sixth step of subtracting the replica from the stored signals and overwriting the signals stored in the storing circuit with a result of the subtraction step (Fig.7, subtractors 205).

Regarding Claim 3, van Heeswyk teaches a wireless positioning method according to claim 2, further comprising: a seventh step of forming the replica by processing a component of the received signal from the first base station in a procedure of despreading, demodulation and resreading by using the code division multiple access (CDMA) system (Fig.7, 200 & 202; Col.6, Lines 23-49).

Regarding Claim 4, van Heeswyk teaches a wireless positioning method according to claim 3, wherein the seventh step includes an eighth step of amplifying a received signal after the despreading, demodulation and resreading (Fig.7, User Signal Reconstruction 202. It is inherent that amplification process is involved in user signal reconstruction block 202 before the signal can be used in the subtractor 205)).

Regarding Claim 5, van Heeswyk teaches a wireless positioning method according to claim 4, wherein the eighth step includes an ninth step of correcting at least one of amplitude fluctuation and phase rotation by a signal propagation path from the first base station (Fig.9, Phase Rotation 268; Col.8, Lines 59-63).

Regarding Claim 9, similar to Claim 1, van Heeswyk teaches a wireless positioning apparatus comprising a signal processor for canceling a received signal from a first base station whose reception power is high than that of a received signal from a second base station in a cellular communication system; a CPU for processing an output signal of the signal processor; a storing circuit for storing the received signal from the first and second base stations, and a timing measurement circuit for measuring reception timings of the signals received from the first and second base stations based on signals stored in the storing circuit, wherein the signal processor has: a replica signal generating circuit for generating a replica of the received signal of the first base station from the signals stored in the storing circuit; and a subtraction circuit for subtracting the replica from the stored signals, and wherein the stored signals are overwritten with a result of the subtraction and the timing measurement circuit measures the reception timing of the signal received from the second base station based on the overwritten signals in storing circuit (Figs. 6, 7 and 8).

Regarding Claim 10, van Heeswyk teaches a wireless positioning apparatus according to claim 9, wherein the replica signal generating circuit has: a despreading circuit for despreading a

Art Unit: 2686

component of a received signal from the first base station by using a code division multiple access system (CDMA); a demodulating circuit for demodulating an output signal of the despreading circuit; and a resreading circuit for resreading an output signal of the demodulating circuit (Figs. 6, 7, and 8).

Regarding Claim 11, see Claim 4 for van Heeswyk's teaching.

Regarding Claim 12, see Claim 5 for van Heeswyk's teaching.

Regarding Claim 15, see Claim 1 for van Heeswyk's teaching.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over van Heeswyk in view of Casabona et al. (U.S. Patent 5,872,540).

Art Unit: 2686

Regarding Claim 16, van Heeswyk teaches a base station transmission timing measuring apparatus according to claim 15. But van Heeswyk failed to teach the use of AGC circuit in the receiver. However, Casabona teaches such circuit in the receiver with the feature of radio frequency interference cancellation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Casabona into the teaching of van Heeswyk to ease the use of such interference cancellation mobile terminal. Van Heeswyk as modified by Casabona teaches an automatic gain control circuit (Casabona, Fig.2, AGC) to which an output signal of the interference canceling means is supplied.

Response to Amendment

5. The amendment filed on 4/16/03 under 37 CFR 1.131 has been considered but is ineffective to overcome the van Heeswyk and Casabona references.

The claimed invention in this patent application is either anticipated or inherently disclosed by van Heeswyk and Casabona, or is known and used routinely by system or electronic circuit designers.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 2686

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TSULEUN R. LEI whose telephone number is 703-305-4828. The examiner can normally be reached on 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D Banks-Harold can be reached on 703-305-4379. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5403 for regular communications and 703-308-5403 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

TRL

TRL

July 22, 2003

Marsha D Banks-Harold
MARSHA D. BANKS-HAROLD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600